

X.—On the Advantages of Burning the Dead.

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I think there is no more loathsome object than a putrid human body. It offends the senses, and it shocks the sensibilities, even of those whose duties make them familiar with the sight. As a rule, interment takes place before decomposition has advanced sufficiently far to alter the appearance of the dead, so that sorrowing survivors are not generally distressed by witnessing those repulsive changes, which begin to take place more or less rapidly, according to temperature, as soon as life ceases. But they do take place, whether the body be above ground, in the earth, or under the water. A number of offensive gases are liberated, and the air is thereby contaminated, and rendered to that extent less fit for respiration. Doubtless it is only in the course of nature, that the human body, like every other organised substance, should undergo those changes by which the elements composing them separate from each other, in order to effect new combinations, and serve in their turn to compose other organised structures. While acknowledging this law of continual change, however, it would, I think, be only in accordance with the improved hygiene which is one of the principal characteristics of the present time, to reduce, as far as may be, the unpleasantness and the unhealthiness accompanying these organic reactions. What is known as sanitary science, comprehends in its teachings and purposes, a mitigation of the effects of such chemical reactions. Drainage, sewerage, the removal of refuse and excreta, deodorisation, disinfection, ventilation, all have reference to the lessening of the effects upon the system, of certain gaseous products, and the disease-germs which frequently accompany them. In securing sanitary precautions, the common good has sometimes been obtainable only by over-riding old prejudices, and combating long-cherished but mistaken convictions; and, indeed, the principal obstacles to such improvements, have, for the most part, been represented by a mistaken conservatism. For example, there are still many otherwise excellent and intelligent persons, who regard cold-bathing every day as a rash exposure to serious risk. It is this general prejudice against innovation, coupled with some superstitious regard

for the dead bodies of those whom we have known during life, which has operated, and will continue to operate, to prevent any material change being effected in the prevalent mode of disposing of the dead. It is true that the practice of intra-mural interment has been abolished in England in certain localities, and that the mounds of human putrefaction which only quite lately were to be seen in the most populous portions of London and other large cities, are no longer permitted to exist. But the alternative to the narrow old-fashioned churchyard, is only the larger area of the cemetery, and, already, some of these places of sepulture are, by the increase of population, becoming as much enclosed as the old churchyards, and are almost as much crowded with bodies. In this part of the world, we have benefited by the experience of the old country, and, in Victoria at least, there are no such things as churchyards, as we understand the phrase. But, in all other respects, we bury our dead pretty much as they have been buried in the old country for the last 1,500 years. We enclose them in wooden boxes, and lay them in the earth to rot. During the last seven years I have had the opportunity of examining some hundreds of bodies in all stages of decomposition, and I have probably, in studying the phenomena of putrefaction as a part of my professional duty, become so accustomed to the sight of this form of fermentation, that I am now less conscious of the repulsiveness which characterises this chemical process, than those who witness it only occasionally. But I am not the less aware of the extent to which the atmosphere must of necessity be polluted by the gases arising, slowly but surely, through the earth, out of the graves of the thousands of bodies which are annually interred in this large city. I am not going to assert that a foul smell is, of necessity, directly injurious to health. I am aware that many persons whose occupation renders it necessary for them to breathe the gaseous products of putrefaction, enjoy what appears to be good health. Indeed, a gentleman some time ago read a paper before the Royal Society, in which he took considerable pains to show that vile smells were rather salutary than not, and another gentleman, shortly after, made a good point in the course of a forensic address, by relating an anecdote, in which a robust nightman, who had never known nausea before, fainted from suddenly, in the course of his duties, coming upon a stratum of frangipanni. But as we know that sulphuretted

and phosphuretted hydrogen gases are very active poisons, even in a diluted form, it is tolerably easy to conclude that, though they may not kill outright when taken into the system in small doses, yet that their continued influence, when breathed during an extended period, must have an operation the reverse of salutary. Besides these gases, however, given out by putrefying bodies, it is tolerably certain that a vast quantity of volatilised matter must be dispersed through the atmosphere during the process, notwithstanding the weight of superincumbent earth. Mr. Walker, a London surgeon, published some 40 years ago a curious book, entitled "*Gatherings from Graveyards*," in which he showed very conclusively that from the surface of the ground above dead bodies, there was continually arising a miasma possessing distinctly poisonous qualities. Considering the subtle and mysterious properties of disease-germs, it is far from unlikely that many cases of disease, in which the agencies of causation are obscure, derive their origin from infectious particles thus volatilised. Considering, therefore, how serious a deterioration of the atmosphere is likely to take place by the continual passing into it of volatilised portions of the dead that we bury in the earth, I have for some time concluded that it would only be in accordance with the progress of hygienic improvement, to substitute for the slow, dangerous, and loathsome process of putrefactive fermentation, that of rapid decomposition by fire. Cremation is one of the most ancient of the many modes in which the dead have been disposed of, and I need hardly remark that it is still practised in some countries, notably in India, at the present day. Of all the many methods at various times in use, it commends itself, to my thinking, as the most rational. It substitutes for a process which takes months to complete, and which is accompanied by concomitant products of the most disgusting kind, a rapid method whose products do not offend the senses, which do not pollute the air, and which do not therefore endanger the health of the living. By the aid of fire, in the course of an hour or two, a body can be resolved into carbonic acid, watery vapour, and a few ounces of solid residuum; for I need hardly say that the earthy residual portion of a body, forms a very small percentage of the whole mass, which consists mostly of water. I am fully aware that the prejudices of modern society are so strong as to prevent the practical adoption of

cremation for many years to come, but I think it will be adopted as an almost necessary part of sanitary ordinances. I do not claim to be original in having now suggested its revival. Professor Polli, of Milan, has lately been strongly advocating its resumption, and, in England, its desirability has latterly been discussed with emphatic approval by several leading social reformers. At Hamburg, I learn that a club has been formed, which is steadily increasing in numbers, the members of which, on entering, make a will, ordering that at their death their remains shall be burned. There is an additional argument in favour of its adoption in the old country, in that grave-yards and cemeteries frequently occupy valuable ground which could be put to much more rational use than to serve as pits of putrefactive foulness. This reason does not so strongly declare itself in Australia, because we might bury our dead in the far interior, where population is not likely to extend for the next century. The only objection would be the expense; and on this point I may take occasion to say that the burning process would, of necessity, be much more economical than any other. I think the useless display frequently made at funerals, for which it is as difficult to account as it is apparently impossible by any sort of reasoning to counteract, is of many unwise customs one of the most unwise. This habit of lavish outlay at funerals, is probably a part of the present system of inhumation, and the revival of cremation might bring with it a simpler, and less costly form of obsequies. The objection to the revival of the process of cremation is, I have no doubt, principally of a sentimental kind. There are attached to the dead a solemnity and a sacredness, which every one almost instinctively confesses, and few things are resented more keenly than any outrage offered to the remains of those whom in life we have loved. This is a feeling which I should be most unwilling to disturb. It is part of the poetry of our nature to visit the tombs of the departed, and to think of them as we knew them in the flesh. This sacredness of the dead has manifested itself at different ages and in different countries, often in curious forms. The Egyptians, as we know, went to great pains and expense in embalming their dead. The Scythians, like some of our aboriginals, made their graves on platforms above the earth. The Ichthyophagi, according to that quaint authority, Sir Thomas Browne, consigned their dead to the sea, in exchange for the fish

upon which they had lived. The old Baleareans, according to the same authority, "used great urns and much wood, but no fire in their burials, while they bruised the bones and flesh of the dead, crowded them into urns, and laid heaps of wood upon them." The Parsees, to this day, imitate the ancient Persian Magi, and reverently expose their bodies on high towers, where vultures gnaw their flesh and leave the skeletons, which are then carefully preserved. Indeed, the history of funerals would show the most contrary practices, all arising, however, from a genuinely reverent feeling, associated usually, if not always, with religious beliefs. Even the practice of the Battas, who are said to eat their aged and infirm relatives as an act of pious duty, may be so regarded. It is known to all of you, I have no doubt, that the Chinese dying here are frequently exhumed and exported to their native land, in accordance with some belief, I am told, to the effect that their future existence will be jeopardised if they be buried in a foreign country. We are bound to respect all prejudices of this kind, and therefore I would speak with the greatest consideration for the feelings of those who would think it an outrage done to the remains of their relatives to consume them by fire. But I am afraid that very few persons, when they take that last sad kiss before the coffin-lid shuts for ever those loved features from their sight, consider how that face would look if they could see it in a week's time. They go to the grave every day, they place flowers upon it, they lay out a garden over it, and, in other ways, show how tenderly they feel towards the dead relative who lies mouldering beneath. And it is an evidence of their better nature and of the poetry within them to do so. But whenever I see a garland of flowers upon a new-made grave, and some sorrowful mourner dropping hot tears upon it, I always feel shocked to think of the seething mass of putrefaction, upon which these said endearments are bestowed. It is a beautiful thought which Shakspeare puts into the mouth of Laertes, where he makes him say :—

"Lay her i' the earth,
And from her fair and unpolluted flesh,
May violets spring;"

but we know very well that in a few days the "fair Ophelia" will be a terrible thing, at which both Hamlet and Laertes would shudder if they beheld it. I ask, therefore, would it not be better that all that can be preserved of those

whom we have so loved in life, should be preserved, so that we might place it where, at any time, we may derive from the contemplation of it, that refined pleasure which comes from sad associations, unmixed with the loathsomeness of corruption ?

And this naturally suggests the subject of urns. The small compass into which the solid residuum remaining after the incineration of the body may be compressed, and its perfectly inorganic character, render it easy to preserve it in an ornamented receptacle, that can be included among those valued relics of domestic interest which every household possesses. Perhaps the superstitious dread of human remains of any kind would, at first, supposing the practice of cremation to be adopted, be sufficient to prevent persons from placing the sepulchral urn among their household treasures ; but there would really be no more occasion for superstitious dread in having a few ounces of phosphate of lime in a sculptured vase, than in keeping a lock of hair in a ring or brooch. And a new branch of art would be revived by the adoption of the practice, and sculpture might thus show itself in unexpected developments of fanciful inventions. The only valid exception which can be taken to the practice of cremation is, that it might prevent those investigations which are sometimes necessary, long after death, for medico-legal purposes. I do not forget that the ends of justice have sometimes been served, by the exhumation of the dead. Crime has often been brought home to the perpetrators, years after its commission, by autopsies conducted upon disinterred bodies, and it may be urged that it would be unwise to deprive society of any means, however remote or infrequent, of bringing offenders to justice. But this objection might be overcome by instituting *post mortem* examinations, in anticipation, in all cases where the least doubt whatever existed, a precaution which now is not taken. If an official inspection were made of all bodies prior to their cremation, perhaps advantages would result which at present are not secured.

Among other objections to cremation it has been urged that it is not necessary, if only bodies are buried sufficiently deeply, so that the evolved gases cannot rise to the surface, but be absorbed by the surrounding earth. I have also been reminded that the dangers from evolved gases have been exaggerated, and that the law of the diffusion of gases, at once effects their dilution to an extent sufficient to

render them innocuous. I am by no means clear, however, that any depth would be a complete security against the evolution of the products of putridity, and I think it will be admitted that the very fact of a gas having a foul smell is an indication, our stench-defending friend to the contrary, that there is danger near. The foul smell, in fact, has been well described as "Nature's monitor," a sense-indicator, suggesting danger. Of the risk from contamination of water from buried bodies I apprehend there can be no doubt; and though the old well-system is not so much in favour as it once was, it is quite impossible to say how far a contaminated subterranean water-course will extend, or how long the water will retain its poisonous qualities. I have been asked if filling the coffin with anhydrous lime would not effect the same end as burning, I reply that it would only partially do so. The body would be decomposed indeed, and there would be combinations between the gases, the product acids, and the lime; but a fluid mass would still remain, and it is questionable if, after all, complete disintegration would result. It has been suggested as a more utilitarian mode of effecting rapid decomposition, to transform the body into artificial guano, by means of sulphuric acid, as is now I believe extensively practised upon the bodies of sheep and other animals which cannot be used for food. I have no especial objection to this mode, but I think cremation is cleaner, and is, moreover, a less dangerous process. It is certainly more poetical. One other objection is to the effect that, whereas by the ordinary practice of inhumation, the products of decomposition are all kept below the ground, in cremation they are distributed through the atmosphere. I would remind those who take this exception to the practice, that the products of combustion are principally water and carbonic acid; that the water certainly does no harm, and that carbonic acid is being continually disposed of by vegetation.

To such objections to the proposal, as consist in the reproach that cremation does away with "Christian" burial, and is the adoption of a Pagan practice, I have nothing to say. To decry an improvement because it is the revival of an old custom, takes the objector beyond the range of argument. It was once considered an eminently Christian virtue, entitling him who practised it to the honours of canonisation, to discard the use of soap and water; and this kind of mediæval piety prevails a good deal yet, notwith-

standing the revival of the good old Roman practice of ablution. I do not find, however, that even Christian sanitarians object to the more frequent use of the bath because it was a Pagan practice.

In any case it would appear that the advantages of cremation far exceed the objections, and that, practically, the objections might be obviated without material difficulty. I am particularly desirous of not being thought inconsiderate towards the feelings of those to whom this proposition may present itself as a horrible outrage upon the sanctity of the dead. In several cases of murder which have occurred, the atrocity of the crime was considered to be aggravated in consequence of the murderers having got rid of the bodies by burning them. Apart from the crime of having taken the lives of their victims, however, there is not, to my thinking, any augmentation of the offence, in the adoption of this mode of disposing of the body. The first impulse of most murderers, after the commission of the deed, is to allay suspicion against themselves, and the difficulty of getting rid of the body is frequently so great, that they are driven to all sorts of expedients to do this. There is really, however, no more of the horrible in burning than in burying a body. Some years ago, there was a great outcry in London, when it was discovered that the churchwardens who had the control of one of those hideous paddocks for the dead, which, in some instances, rise several feet above the roadway, had resorted to burning, as the only sufficient mode of getting rid of the accumulated contents of the "bone-house." There was a howl of indignation all through the land, at the terrible sacrilege assumed to be thus committed. The truth was, though nobody had the courage to say so, that the churchwardens were somewhat in advance of the time. I am afraid, indeed, that in this, as in some other social questions, we are disposed to judge according to our prejudices, and not in obedience to the suggestions of our reason. For all this, I do not forget that some prejudices are respectable, not because they are reasonable, but on account of their having the sanction of long usage, and in that they are held by persons of whose truthfulness and honesty of purpose there is no sort of question. I am prepared, indeed, for encountering both abuse and ridicule for having brought this subject before the Society, and through it to have drawn the attention of the community generally to it. I do not expect to see the practice

of cremation adopted; the old method is too intimately associated with long established custom to make it likely that such an innovation would be received, or even discussed, without some feeling. But, I think that, for reasons of health, convenience, economy, and the encouragement of art, it will one day be the established mode of disposing of the dead, and that the sacredness of the affections will then be in reality much more absolutely respected than they are now by the present system, which dispassionately considered, is revolting to a well-ordered mind, and on sanitary grounds hurtful to the common well-being. The resources now at our command in the way of chemical appliances, by means of which an intense heat can be obtained, would enable us to effect the destruction of a body much more rapidly than by the old-fashioned and clumsy mode of a log fire. The author of a paper in *Fraser's Magazine*, to which my attention has been directed by an esteemed friend, has drawn attention, in advocating the substitution of cremation for inhumation, to the great advantages we possess over the ancients in this particular. It will be admitted, however, that if in a few minutes, by the employment of a very high temperature, we could produce complete incineration, we should avoid those intermediate stages in the process which are occasionally described somewhat sensationally by those who have witnessed the burning of bodies in India.

As to the particular mode by which the process of cremation is to be accomplished, I need hardly speak in detail. Science is now so fertile in resources, that no practical difficulty will be found in this respect. The slow and clumsy method of surrounding a body with logs of wood, and then igniting the pile, may be picturesque and classical enough, but it would not be in accordance with modern improvements. I believe, by a properly-constructed Bunsen's gas-burner, an average body could be reduced to powder in about a quarter of an hour. A gentleman in London lately left his body to the Imperial Gas Company to be consumed in a retort; and a modification of the retort, or something which should combine the kiln, the retort and the reverberatory-furnace, suggests itself. I lately read in one of the scientific journals, the following description of a method proposed by Professor Brunetti of Florence: "The apparatus is a brick furnace, in shape a parallelogram, with ten side openings for regulating the draught. The top is covered with a moveable roof provided with

iron shutters. The body to be incinerated is laid on a metallic shelf of moderate thickness hung up by chains, horizontally, in the inside of the furnace. A pile of wood beneath the shelf being ignited, the operation commences. A quantity of gas is soon evolved, and let off through the opening of the shutters. After the escape of the gases, the body catches fire spontaneously, and is completely reduced to a cinder in the course of two hours. When the furnace has cooled, the ashes on the shelf are collected and put into a funereal urn. In one case, a body weighing 104 lbs. was reduced to a weight of $3\frac{1}{2}$ lbs."

Whatever the plan adopted, however, I am quite sure that it would be possible to surround the act itself with all the ceremonial and solemnity, considered necessary in performing the last offices for the dead. The practice of necessity involves a change in the law of the land, which at present forbids the final disposal of bodies except by burial, and it also presupposes a very considerable social change as regards the sentimental aspect of the proposition. The difficulties of making the practice acceptable, are, moreover, increased by the religious complications involved; for I have been told that it is "positively wicked to burn bodies." These difficulties, however, are only such as time and a more intelligent consideration of the subject will remove. I do not, as I have already said, expect to see the practice of cremation made general in my own day; but I think it will eventually commend itself for adoption, and only waits its recognition, just as many other social reforms have had to await theirs.